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AGRICULTURAL BULLETIN

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Gordon R. Groves, Director of Agriculture

THE TWENTY-SIXTH AGRICULTURAL EXHIBITION, 1961

Again the excellent coverage given the Agricultural Exhibition by the local press leaves little to be recorded here; nevertheless, this bulletin being the official organ of the Department of Agriculture, some reference to this important function is required within these pages.

The Show was officially opened by His Excellency the Governor, Major-General Sir Julian A. Gascoigne, K.C.V.O., C.B., D.S.O., accompanied by Lady Gascoigne, on Thursday, 20th April at 3.00 p.m. The Chairman of the Board of Agriculture, Mr. C. Vail Zuill, M.C.P., J.P., when introducing His Excellency, gave a brief resume of the activities of the Department of Agriculture during 1960, making special mention of the increased production of milk and eggs. Prior to opening the show, His Excellency congratulated the people of Bermuda on the success of the Exhibition, which he termed "bigger and better than any show before it." He noted that the exhibit of flowers and vegetables were far better shown than last year. His Excellency also mentioned the formal garden at the Botanical Garden, and advised everyone to see this wonderful creation which was now in its prime. Referring to the Government House gardens, the Governor said these gardens were developing extremely well and from now until November the grounds would be open to the public on the first Sunday in each month.

The weather was again very kind, and apart from a heavy shower which fell during a display by the band of the Bermuda Rifles on the opening day, all the ring events were carried through without interruption. In addition to the excellence of the exhibits and the splendid co-operation of the exhibitors, and all the voluntary helpers, the show was enhanced by the assistance of Mr. Harry de Layer, Long Island, New York, who brought to Bermuda three horses and a pony, including the famous Snowman, for the purpose of giving an exhibition of horse jumping on each day of the show. This jumping was very much appreciated by the spectators who were thrilled with the jumping of Snowman, who cleared 6 feet 2 inches.

It was particularly gratifying to see the fine demonstration of dog obedience training by members of the Bermuda Kennel Club. This was another event which had great appeal to the public. The pony events and especially those of the Pony Club, never fail to bring applause from the spectators, and this year's events were no exception.

Livestock entries generally were well up to previous standards; the cattle and poultry entries being especially noteworthy.

The food products section was extremely well patronised, with a new class for professional bakers being added, which far exceeded expectation. Of the fruit, flowers and vegetable exhibits, it is perhaps difficult to single out individual exhibits because they were all extremely well staged, and the quality of the produce was of a very high standard. However, the exhibit by Government House in the Horticultural Hall, is worthy of special mention; likewise the exhibits of the Corporation of Hamilton, the Bermuda Florist, the Flower Shop, the Bermuda Rose Nurseries and the Bermuda Rose Society. which made this hall resemble a corner of Chelsea Flower Show. In the vegetable section, the display of vegetables, milk and eggs by the Bermuda Farmers' Association, was extremely well staged, showing to advantage what the farmers can produce here. It is encouraging to report that the 1961 Exhibition was witnessed by 15,000 spectators during the three days. There were 488 exhibitors and 2,971 individual entries; thus establishing a new record since the show became an annual event in 1955.

I would therefore like to publicly thank all those who took part in this Exhibition, for without their help the show would not have been possible.

The Annual Agricultural Exhibition, is an event which many people look forward to and spare no effort to make it a success.

G.R.G.

REMEMBER ! ! !

LAND CONSERVATION ASSURES MAN'S PRESERVATION

The above caption worked in red radishes and yellow statice adorned the sides of the Market Basket entered in the 1961 Floral Pageant by the Department of Agriculture. This basket made of thin strips of cedar wood, was laden with fifty-two kinds of fruits and vegetables, plus milk and eggs; thus depicting the agricultural production of Bermuda. The basket, measuring 18 feet long and seven feet wide was mounted on a Land Rover. The produce weighed at least three quarters of a ton.

This entry was placed first in its class, and received the award the "Most Artistic in the Pageant."

The object of entering this float was twofold; firstly to support the Floral Pageant, and secondly to convey a message to the public of Bermuda, hence the above slogan.

To maintain production of this type, it is essential to conserve all existing arable and pasture land, and to make this available to those who are willing to engage in an agricultural pursuit. On many occasions within these pages, reference has been made to the loss of good agricultural land in the vast building developments which have taken place during the last 10 years. The Board of Agriculture have tried on several occasions to introduce measures

to preserve arable land and open spaces, but with the exception of the purchase by the Government of the Spittal Pond area, the Legislature have not seen fit to support the Board's recommendation.

In another article in this issue, entitled "The Bulldozer" we have tried to point out the folly of some people when developing land for building sites. It appears obvious that insufficient thought is being given to this immensely important subject, the preservation of the natural resources of Bermuda. We therefore feel that until the community is solidly behind the Board of Agriculture in this matter, little progress will be made. We shall therefore use all means at our disposal to bring the matter to the attention of the public.

G.R.G.

THE BULLDOZER

The Bulldozer, a modern labour saving machine, is one which has assisted in the development of land for all sorts of purposes, and is regarded by construction workers as an essential piece of equipment. Good operators can therefore move large quantities of soil and rock with comparative ease in a very short time. The purpose of this article is not to minimise the importance of the machine, but to show how devastating the machine can be unless it is used with the utmost care and forethought.

A few days ago I visited a site in Devonshire, which had been cleared for a housing development. Not a single tree, shrub or blade of grass was visible, after the bulldozer had finished its work. All that remained of this once pleasing undulated site, formerly covered with a mixture of trees and other undergrowth, and small arable fields in the valley, is now mounds of pulverised rock. No soil was visible, and the whole area gave a desolate desert-like appearance.

It is assumed that after the roads have been laid, the area will be divided into lots and sold for the erection of dwelling houses. With the complete absence of soil, what hope has the home maker, who buys a lot in this area, of making a garden around his house? New soil will have to be found from somewhere, which will be a case of "robbing Peter to pay Paul."

It is a great mistake to completely denude the land in this way. It would have been far better to have left the vegetation on the housing sites and to have only used the bulldozer for making the roads. Not so many years ago, when Bermuda was well clothed with live cedar trees, a person wishing to build a house would only remove the trees from the actual building area. All the other trees would have been left to form the basic planting of his garden. Admittedly, the cedars have gone, but other vegetation is taking their place. Would it not be wise to retain this vegetation? Because by so doing the valuable soil would likewise be retained. An appeal is therefore made to construction contractors to think before ordering a bulldozer to clear a site. There are already far too many sites in Bermuda which will not support plant growth because of the absence of soil and exposure to the Atlantic winds, so that inland fertile areas should be treated with the greatest of care and respect, to preserve Bermuda's natural beauties and amenities.

G.R.G.

GARDENING CALENDAR FOR MAY

The Flower Garden

Spring bedding displays will by now have passed their peak or be fast approaching it. Early plants, will of course, be finished.

By now you should have to hand your summer seeds or plants all ready to replace the Spring displays. Summer bedding subjects include Zinnia, Datura, Marigold, Periwinkle, Portulaca, and Blue Salvia. These plants are available in a great variety and form today, thanks to the modern hybridiser, Cannas Crinums, Coleus and Agapanthus may also be used with success.

Before clearing any spring displays, it is a wise plan to take careful notes of any faults which occurred in the beds. Such faults would include placing small growing species behind larger neighbours, thus concealing them; planting in shade or sun when the opposite would have been more beneficial to the plant. Sowing or planting a species too late or too early, thus missing it when the main display was at its best. Planting too close or too far apart. Not staking at the right time, and a thousand and one other cultural points. If these faults can be corrected next season, then the satisfaction gained can only increase the pleasure you derive from your garden. Added interest may also be gained from observing and noting particular seeds strains and varieties which appeal to you. These observations may be made in your own or other people's gardens, both at home in Bermuda and whilst travelling abroad.

To return to the question of summer bedding, from which I have transgressed somewhat, beds should be prepared for re-sowing or planting, after clearance. They should be dug over, and where soil is lacking in fertility, then compost, farmyard manure, peat moss or other suitable humus material may be incorporated at the same time. Where seed is to be sown directly in the beds, it is important to ensure that fresh manure does not come in direct contact with it.

After sowing, protection must be given to the beds from damage by household pets and birds. During dry periods, daily watering, using a fine spray will be necessary, until germination has taken place. After this, watering may be reduced, but cannot be ignored. When seedlings are big enough for easy handling, then some thinning out will be advisable to ensure strong free-flowering plants. The soil must be maintained in an open, friable condition for healthy growth. Tap-watering invariably leaves a thin crust on the soil surface, partiularly on heavy soils. If this crust is allowed to remain and build up, then aeration of the soil becomes restricted, moisture is not allowed easy passage to the roots and unhealthy plants result from it. Frequent use of the hoe is strongly recommended therefore. Not only will it break this crust, but it will also bring about a loose "dust-mulch" condition, which buffers loss of moisture from the soil. A healthy disease resistant plant results from this attention to cultivation. In addition, weed growth, which robs soil fertility, is also prevented.

Where potted plants or bare-root material is used to supplement seed sowings, then the aforementioned attention to successful cultivation still apply.

It is still not too late to plant out trees, shrubs and vines, and to fill in gaps which may have resulted through winter damage in the border.

DONALD J. MOORE,
Superintendent,
Bermuda Botanical Garden.

PERPETUAL FLORAL BEDDING DISPLAYS

Last summer we attempted a form of bedding in the Formal Garden at the Botanical Gardens, which ensured a display throughout the year.

This form of gardening is styled along the same lines as intensified kitchen gardening is in Europe, where the ground is constantly producing, with minimum waste of area, and a high degree of attention to the particular requirements of each crop.

With our mild climate, we have a chance to lead this method into the Flower Garden.

Obviously each season has its highlights, but these may be extended by careful planning. Also something of beauty is always seen, even during off-seasons, thus maintaining horticultural interest.

A complete bed of Petunias or Snapdragons is indeed a beautiful rewarding sight at its peak, but what of the dull, uninteresting view of the bare soil, between these peaks.

Bermuda is not formal in appearance, therefore we must avoid complete formality in the garden, if it is to be part of the surrounding natural beauty.

Solid beds of any one subject are formality in themselves, and therefore should be avoided, where space permits.

A mixed planting such as we have attempted this year, is semi-formal in appearance, colourful, yet not too dazzling to the eye that it lacks the beauty, nature intended it to have.

A variety of plants are used in irregular groupings, thus increasing scope in design and range of material.

The more uncommon plants may be used in cautious numbers at first, but if successful, in bolder groupings later.

Central planting of permanent material, such as Canna's Clivias, Agapanthus, Amaryllis, Canoe Plant, Begonias, Cordyline Datura, Dahlia, Cloth of Gold, Lantana, Blue Sage, Eranthemum, Cassia, Day Lily, Crinums, and a host of others, too numerous to mention, will add form and beauty to the displays, becoming perpetual in flower and value.

The quantity used will be governed by the size of the bed, as will the range. These permanent plants must always be far less in number than all other material used.

They may radiate out from the centre in large displays, intermingling always with their less permanent neighbours.

Foliage effects are as important as flower colour. The many variations and hues of the Coleus family, make them invaluable for bedding work. Planted in mass, to form a carpet, their overall effect is one to be remembered.

For finest results, copious water must be supplied, particularly in the summer, and flowers must be constantly pinched out.

The effect of grey foliage as found in "Lavender Cotton" (Santolina) and Dusty Miller (Centaurea) is invaluable also.

Drain on soil fertility is very high in any form of intensified gardening, and this point must be to the forethought of your mind at all times. Organic material must be applied annually at least, and in a generous quantity to vacated areas, prior to replanting. Artificials may be used to stimulate growth in established sections.

You must always be thinking one jump ahead and raising takeover crops to replace those which are past their best, at the right critical time. Your careful attention to colour effect and harmony will avoid clashing displays, which are hard on the eye, and defeat their object. However, colour is a matter of sensation, and as all individuals react differently to sensation, then you will not please every person's eye.

Finally, I would say that the arrangement of a flower bed has common ground with that of a flower arrangement in a container. Just as a vase of flowers adds charm and beauty to the home, so does the outdoor display perform a similar role in the garden. This form of bedding display is, in effect, an extension of floral arrangement. In addition, it gives an opportunity for self-expression, experiment and a refreshing new approach to gardening in Bermuda.

DONALD J. MOORE,
Superintendent,
Bermuda Botanical Garden.

MANURIAL VALUE OF SEAWEED

Seaweed is one of the oldest manures known, and has been in use since remote ages in the coastal districts of Great Britain. It contains about the same amount of nitrogen as ordinary farm crops, and a considerably higher percentage of potash, but when rotted down it is not a well-balanced manure. It is deficient in phosphoric acid to supply the needs of plants, and for this reason should be supplemented with phosphates — superphosphate, basic slag or bone meal. Thus supplemented, seaweed is quite equal to that of dung as a fertilizer. Furthermore, seaweed contains some of the trace elements so essential for the healthy growth of plants, for example, there is in dried seaweed approximately 1½ per cent by weight of the much needed magnesia.

The average composition of farmyard manure taken over a period of several years, according to Sir John Russell, is as follows:

N.	Phosphoric Acid	Potash
0.54	0.23	0.67

Whereas the average composition of wet seaweed from the Journal of the Board of Agriculture, 1910, is:

N.	Phosphoric Acid	Potash
0.3-0.8	0.02-0.17	0.8-1.5

The composition of seaweeds varies with the season, but with few exceptions the weed collected early in the year, in the spring, is richer in nitrogen, potash and phosphoric acid than that obtained later in the summer or autumn. This may be accounted for, in part, by partial drying in the warmer months of the year.

The following analysis of absolutely dry laminaria, or oarweed, taken in the spring and autumn is a typical example of the change in the composition of seaweeds at different times of the year:

	Nitrogen	Phosphoric Acid	Potash
Spring	**2.25**	**0.56**	**3.5**
Autumn	**1.32**	**0.22**	**0.65**

The popular opinion is that the oarweeds are the best seaweeds as fertilisers, but this is not so, as the best seaweed for manurial value is carragheen moss, Chondrus crispus, followed in order by dulse, bladder wrack and oarweed.

Dry, pulverised seaweed is a very rich manure and should be utilised to a greater extent than is done at present, but its value is becoming better known, and commercial products are now available on the market.

The following table shows the average composition of a few particular seaweeds taken from the results of several analysts after water has been entirely expelled at 100°C. It shows the high manurial value of dry seaweed.

	Nitrogen	Phosphoric Acid	Potash	Magnesia
Chondrus crispus	2.42	0.55	4.15	1.4
Rhodymenia palmata (dulse)	2.14	0.64	5.2	0.65
Fucus vesiculosus (bladder wrack)	1.59	0.5	2.5	1.26
Laminaria digitata (oarweed)	1.95	0.43	1.58	1.24

The fact that seaweed is free from weed seeds is much in its favours when comparing its use with that of farmyard manure.

TOM WILLCOCKS, L.C.P., F.L.S.

Gardeners' Chronicle, Gardening Illustrated
November 19, 1960.

ARTIFICIAL FLOWERS

During recent years the manufacture of artificial flowers has developed to an extremely high standard of perfection, and the sales of these artificial products are obviously having a serious effect on the sale of live flowers.

During the Agricultural Exhibition, in discussing this subject with one of the flower judges from the U.S.A., I gathered that some of the leading firms in the U.S.A. who used to specialise in the retail sale of live flowers, have

now turned over entirely to the sale of the manufactured article. I also noticed that at least one float in the Floral Pageant, while extremely beautiful, had used some artificial flowers. This, to the horticulturist, and especially to the flower grower is a most unfortunate trend.

It would indeed be a great tragedy to the horticultural profession, if the manufactured flowers became so popular that they are used exclusively for internal decoration. The long established art of growing flowers would be lost or sadly reduced. This then, is surely a challenge to the flower growers to give serious consideration to the present cultural methods, and to establish a practise which will enable the growers to put flowers on to the market at prices which are competitive with other sources of supply. It is realised that many people still prefer live flowers, but the growers should not rely on this sympathy, but make a determined effort to find methods which will reduce production costs.

G. R. G.

SPRING CROP — POTATOES

Despite the very dry weather which prevailed throughout the month of March, the spring crop of potatoes now being reaped is yielding far better than was expected. Although the tops are considerably dwarfed, the tubers are of good quality and size. Yields vary somewhat. Potatoes planted in early January have only yielded four from one, whereas those planted from the middle to the end of February are yielding about eight from one.

These later planted potatoes were able to take advantage of the rains which fell during the first two weeks of April. This needed rainfall undoubtedly saved the potato crop.

It is estimated that the potato crop now being harvested will be adequate to fulfil the Colony's demands until September.

G. R. G.

WEATHER RECORDING STATION AT BOTANICAL GARDENS

Summary of Climatological data obtained at the Botanical Gardens during April, 1961:

Mean Maximum temperature	70.3
Mean Minimum temperature	60.9
Mean Monthly temperature	65.6
Absolute maximum	75.3 on April 27th
Absolute minimum	50.7 on April 10th
Rainfall	8.08 inches
Number of rain days	13